

DIGITAL-AF:

Results from a real-life digital
population screening
for atrial fibrillation
using only a smartphone

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Introduction

- 25% lifetime risk for developing AF
- 14-17 million pts with AF in EU by 2030
- 1.5 to 2 – fold increase in mortality
- Treatment prevents morbidity/mortality

Screening for AF



- Opportunistic screening by pulse palpation or ECG in > 65yo (class I, level B)
- Systematic ECG screening in >75 yo or increased stroke risk (class I, level B)
- ECG and 72h monitoring (class I, level B) and prolonged monitoring (class IIa, level B) in TIA/stroke patients

Innovative technologies

- Dedicated ECG screening devices



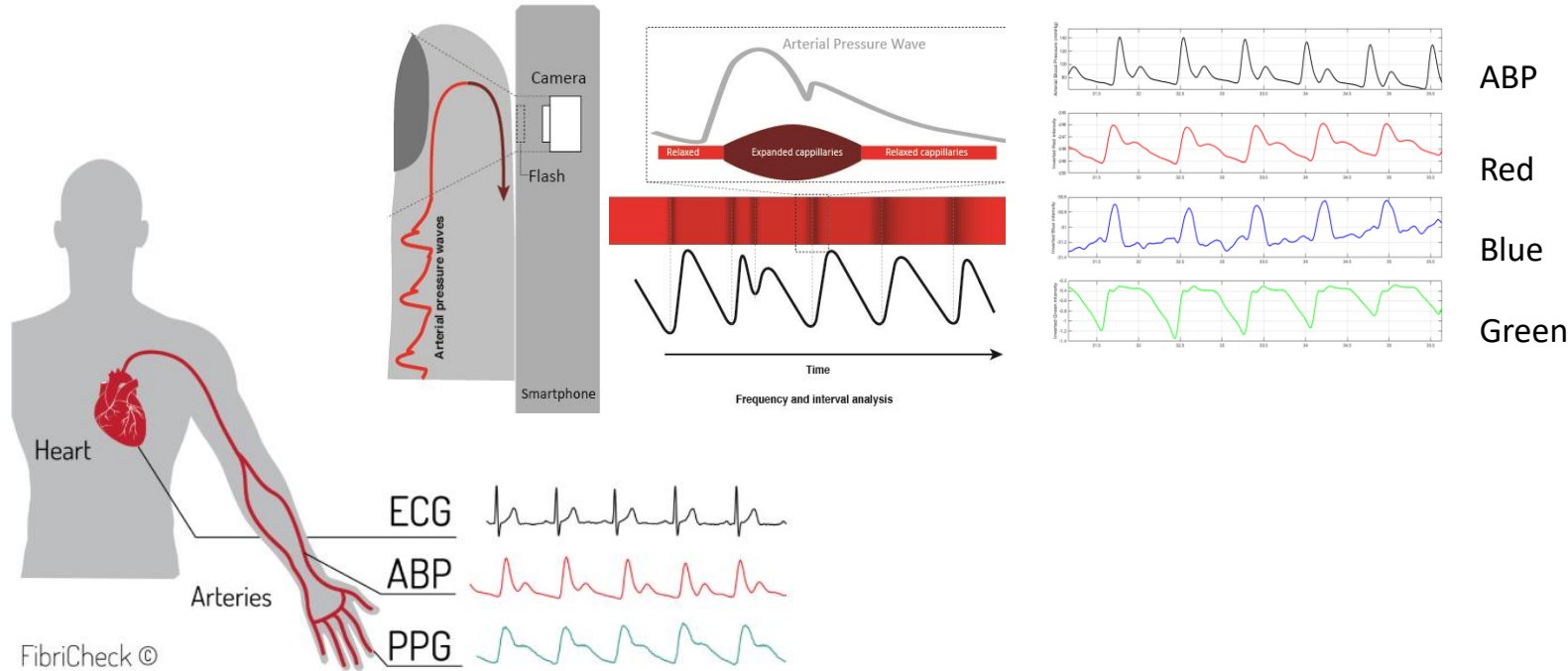
- Long-term ECG monitoring



- Non-ECG technologies



Pulse Plethysmogram



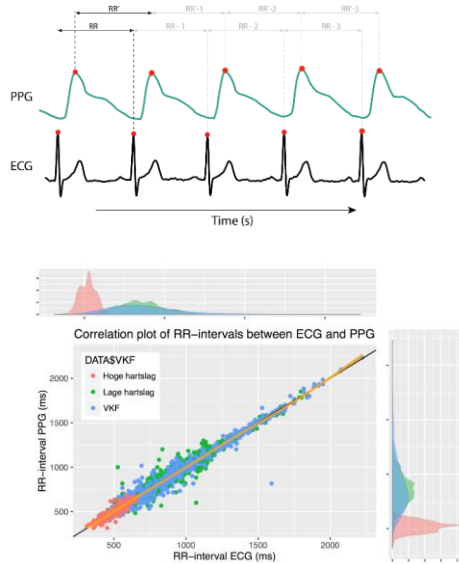
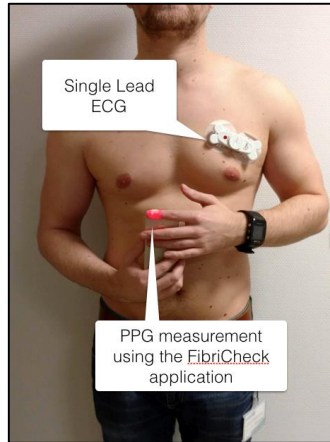
Digital-AF study



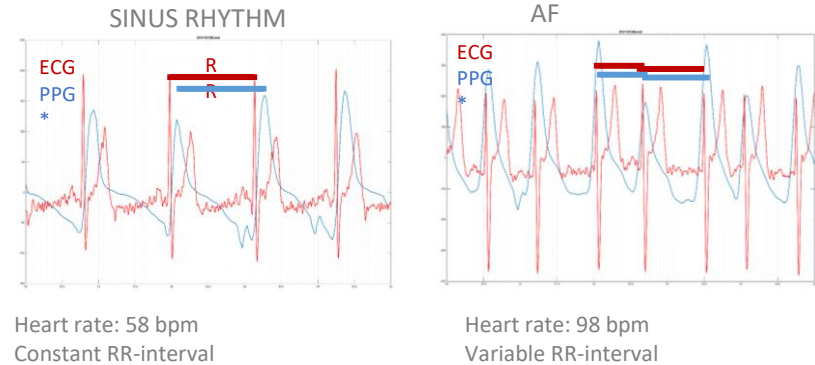
World's first medical approved
smartphone app for heart
rhythm disorders

CE Class IIa medical device

Digital-AF study



Clinical Validation



Simultaneous ECG – PPG
Close to 2000 pts
95,8% accuracy in 60 seconds

Digital-AF study



Local newspaper article
92 638 subscribers



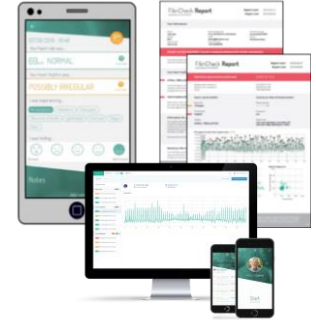
Download the app
Create account
Scan QR-code



Information
60s recording
Symptoms



Steady position
2 measurements/day
1 week



Instant feedback
Centralized reviewing
Summary report

12 328

registered users
in 48 hours

120 446

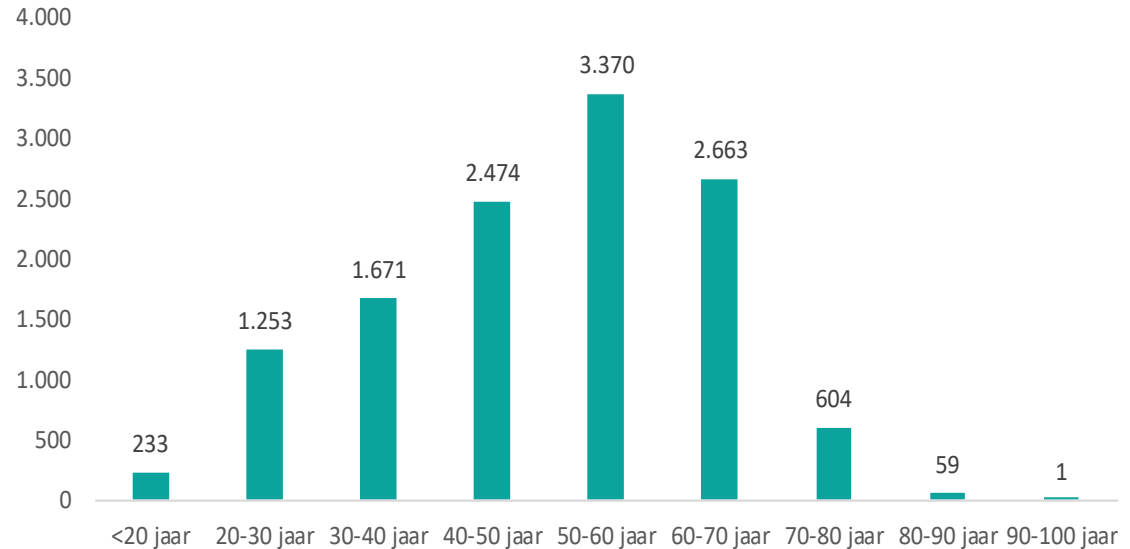
60-second PPG traces
in 1 week

Digital-AF results

12 328

registered users
in 48 hours

Age: 49 y +/- 14 y
M/F ratio : 58/42 %
75% is > 40 yo

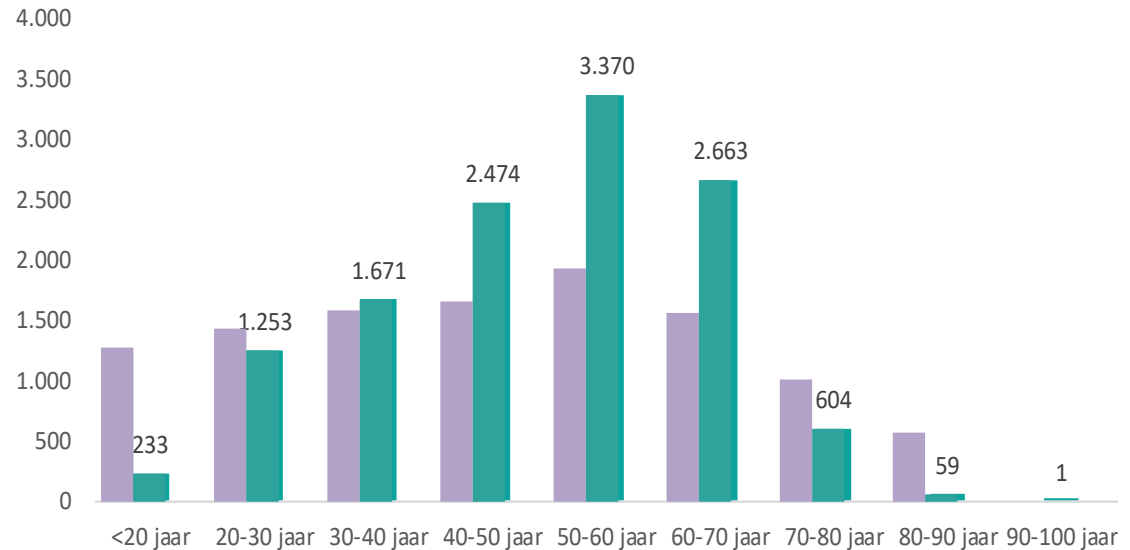


Digital-AF results

12 328

registered users
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M/F ratio : 58/42 %
75% is > 40 yo



Age distribution general population

Digital-AF results

Automated
Heart Rhythm Analysis

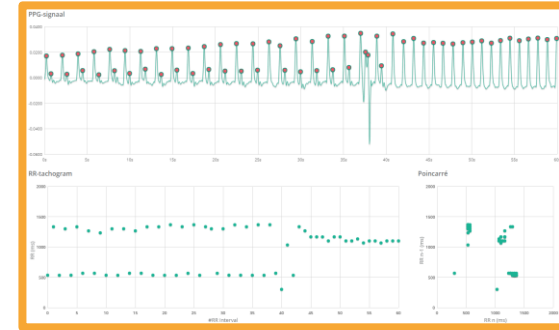
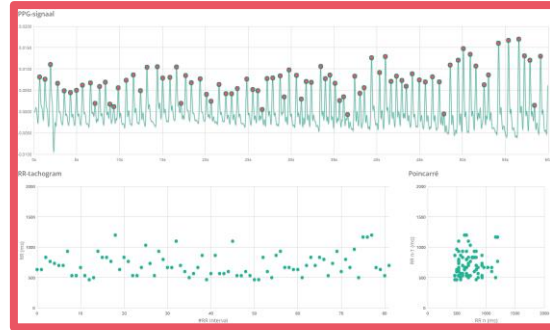
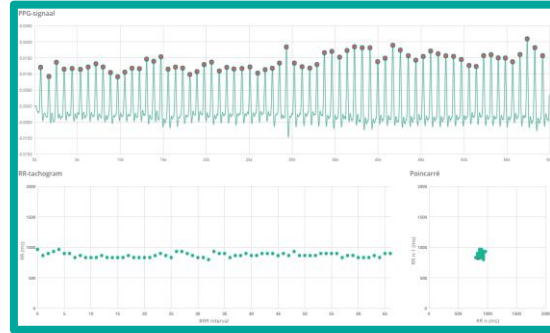
120 446 traces

98 586 **normal rhythm**

9 733 **insufficient quality**

12 127 **possible irregularities**

Reviewed by trained technicians



Digital-AF results

Automated
Heart Rhythm Analysis

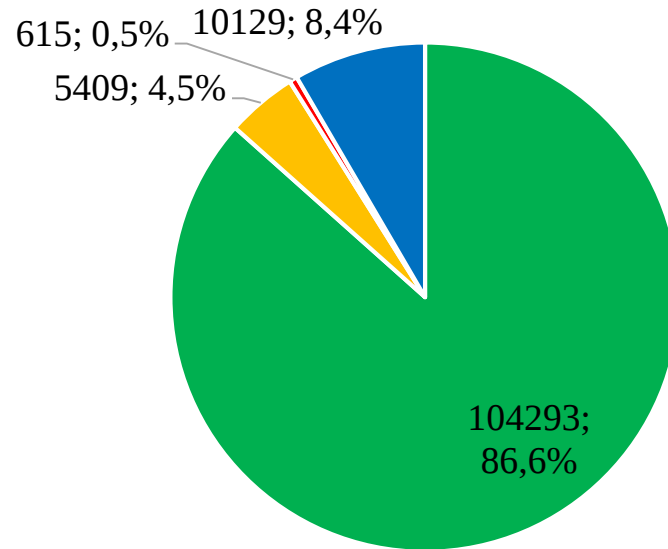
120 446 traces

98 586 normal rhythm

9 733 insufficient quality

12 127 possible irregularities

Reviewed by trained technicians



615 atrial fibrillation
in **136** participants

Digital-AF results

FibriCheck Report		Start 12/02/2018 Stop 19/02/2018
Your information		
Name Hanne Griels Gender Female Birth day 11/08/1993	Screening period 12/02/2018 – 19/02/2018 E-mail hanne.griels@fibrichек.com Telephone number 0476453737	Smartphone type iPhone 5S Validation by Fibrichек center
ACTION REQUIRED: visit your physician		
Your heart rate is irregular due to atrial fibrillation which is an uncoordinated contractions of the upper pumping chambers of the heart. It can be associated with a higher than normal risk of stroke. If you have not been diagnosed with this before, you should consult a medical professional.		
Your analysis results		
Atrial fibrillation Your heart rate is irregular which is a strong indication for atrial fibrillation, an uncoordinated contraction of the upper pumping chambers of the heart. It can be associated with a higher than normal risk of stroke. If you have not been diagnosed with this before, we strongly advise you to consult a medical professional.		
Tachycardia Your heart rate is irregular due to atrial fibrillation which is an uncoordinated contractions of the upper pumping chambers of the heart. It can be associated with a higher than normal risk of stroke. If you have not been diagnosed with this before, you should consult a medical professional.		
Information for your physician The Fibrichек monitoring center revised all your measurements and all measurements indicated a normal sinus rhythm. You're perfectly fine based on the outcome of these measurements! Hereunder you can find the medical details of your measurements. You can show them to your doctor during your next appointment. But, as said, no need to run to your doctor with these results.		
Would you like to continue Fibrichек monitoring? Your heart rate is irregular due to atrial fibrillation which is an uncoordinated contractions of the upper pumping chambers of the heart. It can be associated with a higher than normal risk of stroke. If you have not been diagnosed with this before, you should consult a medical professional.		
This test results is not a diagnosis. It only shows relevant medical advice. Please see professional medical assistance if you are or believe you are suffering from any medical problem. This device does not assess or measure at least vital heart rhythm or heart-vascular changes, especially those related to ischemic heart conditions. This report is based solely on the only monitoring submitted for analysis. Medical conditions, symptoms experienced are not considered but are provided to assist your physician. Symptoms to date may be different based on present and/or previous. The information provided is for your use as well as the information and/or opinion provided by the Fibrichек medical technicians and staff are to use self-assessments, but are not intended to be a replacement for professional medical advice and/or medical treatment. Fibrichек is not a medical device.		

[illegible]

FibriCheck Report	Report start	2018-08-01
Generated on 2018-08-21	Report end	2018-08-21

Your information

Name	Monitoring period	Smartphone type
Kuc Blauys	From 2018-08-01 to 2018-08-21	samsung SM-J10H
Gender	Email	Group
Male	kuc.blauys@telenet.be	ZOL Genk
Date of birth	Phone number	
1962-10-21	0494890784	

NO ACTION REQUIRED

There were no significant abnormalities identified. You can print this report and present it to your physician during your routine visit.

Your heart rhythm results

ISOLATED ECTOPIC BEATS

Ectopic beats are extra heartbeats that originate from the upper or lower chambers of the heart. These extra beats disrupt your regular rhythm, sometimes causing you to feel a fluttering or skipped beat in your chest. Isolated ectopic beats are harmless, however, when presenting more frequently, they can stimulate the development of more serious rhythm disorders. If these symptoms are causing any disturbance or you would like to identify the source of these symptoms, you can consult a medical professional for more information.

REGULAR RHYTHM

Your heart rate and rhythm have been within the boundaries of normal values. There are no significant deviations found.

Information for your physician

Your patient participated in a project where a screening or monitoring of the heart rhythm was carried out using the FibriCheck smartphone application. FibriCheck is a medical device and the analysis of the results have been interpreted by trained medical professionals. The findings made in this report are indicated above. For your information, the details about the heart rhythm measurements are enclosed in this document. If you have questions on how to read these traces, you can always reach out to FibriCheck on 0032 11 48 59 53 or through support@fibrichck.com.

Would you like to prescribe FibriCheck to your patients? Read more on our website [www.FibriCheck.com](#).

Would you like to continue using FibriCheck?

Your FibriCheck period is expired which means you can no longer perform measurements using the smartphone application. In case you would like to continue there are two options available: ask your physician for a prescription or go to [www.fibrichck.com](#) and get your own prescription

This result is not a diagnosis, it does not replace medical advice, please seek professional medical assistance if you are or believe you are suffering from any medical problem. This device has been developed and tested in Belgium, under CE mark, for people who want to monitor their heart rhythm. It is not intended to be used as a medical device for diagnostic purposes. The manufacturer assumes no liability for any damage caused by the use of this device. The user must ensure that the device is used correctly and in accordance with the instructions provided by FibriCheck as well as the official app developer. All reports generated by FibriCheck and its related apps, and all data collected, shall be considered the property of FibriCheck and its related apps. A payment for complete 12 Lead ECG scans is implied, regardless of your personal situation.

Digital-AF results

136 participants with AF

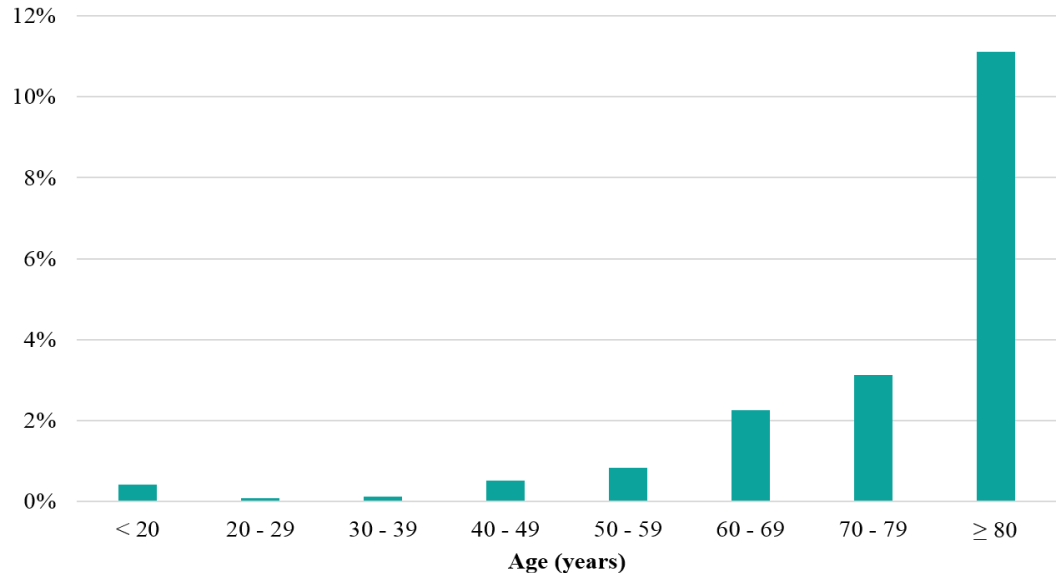
Age: 62 y +/- 11 y

M/F: 74%/26 %

Higher BMI

76% asymptomatic

1.1% overall prevalence



Digital-AF results

136 participants with AF

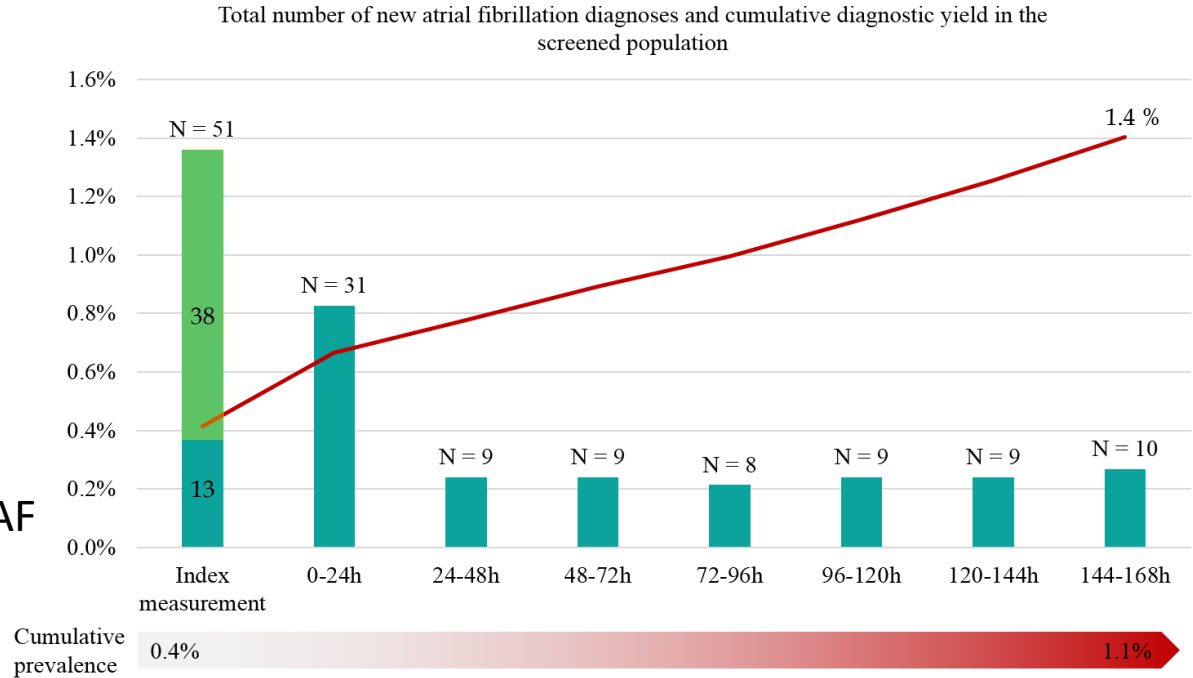
1.1% overall prevalence

0.4% AF spot check

1.4% AF one week

38 persistent/permanent AF

98 paroxysmal AF



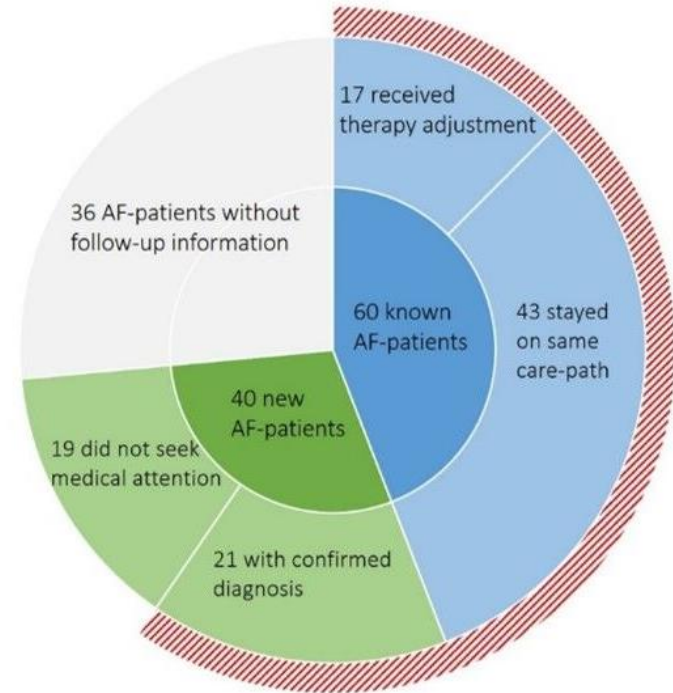
Digital-AF results

136 participants with AF
Follow-up questionnaire after 4 months

36 ptp no info

60 ptp with known Cardiac Arrhythmia

40 ptp with new AF



Digital-AF Conclusions

- World's first mass screening for AF using a smartphone only
- Smartphone camera can obtain reliable PPG signal in a broad population
- More intensive screening results in higher diagnostic yield
- Majority of AF cases were asymptomatic
- Importance of secondary off-line analysis
- No clinical infrastructure needed, increased comfort for participants, cost efficient

TODAY

7:08 PM ✓



Thank You

